FOREST INSECT LABORATORY,
STANFORD UNIVERSITY CALIFORNIA

SB
763
.C2 S73
1915

STATEMENT OF PINE BORING WORK DONE BY MCCLOUD RIVER LUMBER CO. 1913 - 1914 - 1915.

NEW TERRITORY

TERRITORY GONE OVER 2nd and 3rd time.

	1913	1914	1915	Total	1914	1915	Total
No. Acres	4280	31,308	10,882	46,470	3,840	34,748	38,588
" trees	220	1,037	302	1,559	29	334	363
" feet cut	223086	648,381	355,680	1627,147	37,548	283,400	420,948
Avg. Dia.	28"	24"	26"		28"	26"	26"
Avg. per Acre	77.50	30.30	32.70.	35.10	9.75	10.90	10.90
" " Tree	1468	912	1175	1045	1292	1145	1190
" " " per 40-	2.05	1.32	1.11	1.34	.203	.382	377
" feet "	3020	1210	1325	1400	391	458	447
" Tbr. per	approximately 14,000 feet.						
% Tbr. dead ap.	.55	.32	.33	.35	.07	.08	.08
Trees per 40 live	approximately 526						
Ratio dead to live trees -1	283	396	474	592	1735	1735	1299

Total by Townships

TWP.	RANGE	ACRES	TREES	FEET	AVG. DIA.
43	1-West	1,960	74	78,277	25"
43	1-East	950	30	55,099	36"
44	1- "	9,540	476	551,655	26"
45	1- "	160	7	3,073	26"
44	2- "	15,380	705	668,072	24"
45	2- "	10,720	485	423,679	25"
44	3- "	5,120	133	178,920	27"
45	3- "	2,560	88	68,710	25 "
Total		46,470	1,998	2,028,085	25"

Total Avg. per acre ft.	45.20
" " " tree	1065
" " trees per 40	1.65
" " feet per "	1760
" " per acre approx.	14,000
% Timber dead	.33
Avg. trees per 40 - live	526
Ratio dead to live trees - 1	319

Costs	1913	1914	1915	Total
Total cost	$305.02	$2,825.03	$2,956.56	$6,087.81
Cost per acre (total acres)	.0715	.0725	.049	
" " " (actual acres)				.109
" " Tree	1.39	2.72	9.78	3.63

COPY FOREST INSECT LABORATORY, STANFORD UNIVERSITY CALIFORNIA

SB 763 .C2 [redacted] 1914

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STATEMENT OF PINE BEETLE WORK DONE BY MCCLOUD RIVER LUMBER CO.
1913 - 1914 - 1915.

	NEW TERRITORY				TERRITORY GONE OVER 2nd and 3rd time.		
	1913	1914	1915	Total	1914	1915	Total
No. Acres	4280	31,308	10,882	46,470	3,840	34,748	38,588
" trees	220	1,037	302	1,559	29	334	363
" feet cut	323086	948,381	355,680	1627,147	37,548	383,400	420,948
Avg. Dia.	28"	24"	26"	25"	28"	26"	26"
Avg. per Acre	77.50	30.30	32.70.	35.10	9.75	10.90	10.90
" " Tree	1468	913	1175	1045	1292	1145	1190
" " " per 40-	2.05	1.32	1.11	1.34	.303	.382	377
" feet "	3020	1210	1325	1400	391	458	447
" Tbr. per	approximately 14,000 feet.						
%Tbr. dead ap.	.55	.22	.23	.25	.07	.08	.08
Trees per 40 live	approximately 526						
Ratio dead to live trees -1	263	399	474	393	1735	1735	1399

Totals by Townships

TWP.	RANGE	ACRES	TREES	FEET	AVG. DIA.
[redacted]N	1-West	1,960	74	78,277	25"
43	1-East	950	20	55,699	36"
44	1- "	9,640	476	551,655	26"
45	1- "	160	1	3,073	36"
444	2- "	15,360	705	663,072	24"
45	2- "	10,720	425	428,679	25"
44	3- "	5,120	133	178,920	27"
45	3- "	2,560	88	88,710	25 "
Total		46,470	1,922	2048,085	25"

Total Avg. per acre ft.	45.20
" " " tree	1065
" " trees per 40	1.65
" " feet per "	1760
" " per acre approx.	14,000
% Timber dead	.33
Avg. trees per 40 - live	526
Ratio dead to live trees - 1	319

Cost	1913	1914	1915	Total
Total cost	$306.02	$2,525.23	$2,236.56	$5,067.81
Cost per acre(total acres)	.0715	.0720	.049	
" " " (actual acres)				.109
" Tree	1.39	2.38	3.51	2.63

355.21
340 mss

Bray, Calif.,
July 1, 1914.

Mr. H. E. Burke,
Placerville, Calif.

Dear Mr. Burke:

I am submitting to you a report of the McCloud River Lumber Co's insect control work, near Bray, Siskiyou County, Calif. consisting of parts of Twps. 44 and 45 North, Range 2 East, 43 and 44 North, Range 1 East, and 44 North, Range 1 West, MDM This work was begun March 16, 1914, and closed May 30, 1914. Approximately 35000 acres were gone over, and 1076 infested trees treated, with an average diameter of 27 inches - height 78 feet.

Conditions.

This timber is situated in the northern part of Siskiyou County near the Oregon line, more accurately described by the following boundaries. Butte valley and Klamath Lake on the north, Antelope Creek on the west, the divide between the head waters of the Sacramento river and Butte valley on the south, and the Medde lava beds on the east. Comprising some 90,000 acres owned principally by the Weed Lumber Co. McCloud River Lumber Co., and the Shasta National Forest.

The general topography of the country is flat, with a gentle slope to the north which increases as the range of mountains to the south is reached. The formation is lava with a scant covering of soil and a pronounced scarcity of water throughout the area. The elevation ranges from 4500 to 6500 feet.

The timber is practically all yellow pine, with the exceptions of the higher elevations, which contain a few scattering sugar pine, white and shasta fir, and an occasional stand of lodgepole pine. A general average of the merchantable timber throughout the area is 2500 -3500 board feet to the acre.

Methods of locating infested timber, treating, etc.

Three three men crews were employed, the third man to run lines, locate infested timber, keep a record of trees treated(lengths, diameters, etc) and act as foreman of the crew. Each crew was located on a separate section, the cruiser instructed to run strips thru the section by compass line, these strips varying in width from ten to twenty chains according to the density of the timber. The cutters following along, with orders to be on the lookout for fading tree tops, thus greatly eliminating the danager of overlooking infested timber.

When an infested tree was encountered the cruiser remained with the crew, assisting in the operation of felling and treating. Continuing the strip as soon as the work was finished in the same manner as above, in this way the whole section was gone over.

No cruising was done ahead of the cutting crews, I have found in my experimente in control work in this vicinity that spotting and marking infested timber ahead of actual operations a waste of time and money, as a tree designated on a section plat or map must be found the second time by running a compass line. This method of cruising may not be advisable on other control projects, but in a country of this sort that is open and level with the infestation averaging about the same on all the sections, it proved very satisfactory.

In this control project the policies of the Bureau of Entomology in regard to successful control of beetle infested timber were followed to the letter, under my special supervision.

The following inserted sheets will contain a memorandum of the treated trees per section, average diameter and heights, cost per tree, ect.

J.D.Riggs,
Entomological Ranger.

copy

Number of trees per section.

Twp. 43N,R1E,	S7	No. of trees,	2.	ave. D.B.H.	31ine,	ave. ht.	90ft.
"	S6	"	2.	"	38	"	100
Twp. 45N,R2E.	S20	No. of trees,	13.	Ave. D.B.H.	2Line.	Ave. Ht.	71ft.
"	31	"	19	"	22	"	71
	27		26		27		79
	25		12		25		75
	28		34		23		61
	32		27		19		61
	26		12		25		77
	21		11		28		75
	29		23		23		64
	14		5		29		85
	15		15		25		72
	23		12		19		64
	24		2		23		73
	36		19		25		75
	35		15		23		70
	33		15		29		91
	34		25		29		88
	22		43		25		80
Twp. 44N,R1E,	S28	No. of trees,	7,	Ave. D.B.H.	36Inc.	Ave. Ht.	85ft.
"	4	"	3	" "	29 "	"	85
	5		2		35		75
	18		5		20		60
	7		3		33		97
	13		31		19		64
	29		8		22		71
	14		2		31		70
	24		53		21		65
	12		18		22		70
	20		4		38		90
	8		7		30		78
	34		3		26		75
	23		5		25		70
	22		8		17		51
	26		2		20		75
	27		9		23		70
	33		3		28		80
Twp. 44N. R1W,	S24	No. of trees,	9	Ave. D.B.H.	28In.	Ave. Ht.	72ft.
"	13	"	25	"	24	"	76
	12		20		23		70
	1		4		29		81

Twp.	44N,	R2E,	S16	No. of trees,	20	Ave. D.B.H.	24inc. Ave. Ht. 60 ft.
"	7	"	4	"	23	"	60
	14		27		20		69
	4		20		29		80
	13		4		20		66
	21		9		22		73
	5		32		21		62
	9		38		26		76
	19		32		20		59
	12		17		21		71
	18		41		22		65
	20		8		31		89
	1		22		23		70
	22		9		26		85
	6		11		24		74
	3		15		25		70
	17		38		19		58
	11		36		18		62
	2		34		21		77
	10		30		26		80
	15		36		26		85
	8		30		27		90

Total number of trees treated, 1076.

Average diameter breast high 27 inches

Average heights, 78 feet

Cost of treating per tree $2.347

Cost of labor $1851.67

Cost of supplies $673.56

Total cost of work $2523.23

The infested trees were felled, the bark removed, piled along the log and burned, with the exception of the few small trees treated, which were bucked up in to small lengths, piled and burned.

Number of men employed, rate of wages, location of camps, etc.

Arthur Thomas, the Company's fire warden had charge of the work, and also acted as cruiser for one of the crews.

Four camps were established during the work, with the following location. The SE¼ of S14, T44N, R1E, the Se¼ of S8 the same Twp. the NW¼ of S4, T44N, R2E, and in the NE¼ of S12, T43N,R1E. In the location of camps water had to be taken into consideration more than the distance to and from work.

Two teams were used in the work, for transporting men to and from the woods, hauling supplies, moving camp, etc. In excess of the nine men engaged in actual control work, was a cook and teamster, making a total of eleven men. In conjunction with teaming the teamster was used in keeping a supply of wood for the cook tent, and when not otherwise employed worked with one of the crews in the wood.

The following wages were paid including board. Cutters $2.00 a day, cruisers $2.50 per day, cook $70. per month, teamster including team$5.00 per day. Mr. Thomas the foreman received $5.50 per day including his team. Both team owners boarded their teams.

Methods of locating infested timber, species of infesting insect,etc.

The locating of the infested timber was principally determined by the fading foliage, altho in a great many instances bird work and fresh lightning scars drew the cruisers attention to the tree.

All thru the period of the work I particularly observed the foliage of the infested lightning struck trees, in nearly all ases these trees retained their original color up to the close of the work. A probable explanation of this condition, is that in nearly all cases lightning belts will seek the vigorous and growing trees, due no doubt to the sap contained in the tree, offering less resistance to the electric current than matured timber containing less sap. Consequently the retarded fading of the foliage.

The majority of the beetle depredation was found to be D. brevicomis. Some of the smaller treated trees contained D. monticolae, and an occasional gallery of this species was noted intermingling with the work of the D. brevicomis. Workings of the D. valens and Ips emariginatus was found in nearly all of the treated trees.

Conclusion.

During the last part of the work the control area of the spring of 1913, consisting of 4200 acres, in Twp. 44N, R1E,M.D.M. was again gone over. Thirty six trees were found and treated against 250 treated on the same area the year before.

While this work has been in progress, I have gathered a number of notes in regard to foliage and brood conditions of the treated infested trees, also personally inspected a number of the trees I labeled last fall, during my recruise of the first control area, in regard to their condition at that time. A mention of which I made in my report of that work.

Ninety-eight(98) of the total number of trees treated were on Forest Service land. In the begining of the work an agreement was made between Supervisor Hammatt and the representatives of the McCloud River Lumber Co., for the company to treat any infested trees on Forest Service holdings, laying adjacent or in the control area, Mr. Hammatt paying his per rate of the cost.

Antelope Creek Project.

Recruise of Sept. 24 - Dec. 9, 1913.

Location.	Infested Trees treated May 11-June 24,'13. 2nd Generation '12.	Infested Trees not treated May 11-June 24,'13 2nd Generation '12.	Trees Infested and abandoned in 1913. 1st Generation'13.	Trees Infested at present Dec. 1913. 2nd Gen. '13.
T43N,R1E,Sec. 4	1			
" 5	2			
T44N,R1E, " 14	2			
" 22	15	2	3	4
" 23	36	4	5	6
" 24	7			
" 26	14	1	1	2
" 27	40	1	8	7
" 28	49	1	4	2
" 29	1			
" 32	14	4	4	
" 33	16	3	3	4
" 34	36	1	6	3
" 35	3			
Total	236	17	34	28

The project covered 4320 acres. 11 trees in sec. 28, 4 trees in sec. 32 and 1 tree in sec. 33 were treated during the winter of 1912 by Firewarden Thomas of the McCloud River Lumber Co; the other 220 trees were treated by the same company under the direction of Agent J. D. Riggs during the period May 11-June 24, 1913. 93% of the infested trees on the area were treated. The cost per tree was $1.65.

Comparing the total 2nd generation of 1912(253 trees, 236,785 ft. bm.,$472.00 worth) with the 2nd generation of 1913 infested trees (28 trees, 21,381 ft. bm. $42. worth) and we have a reduction of 89% in the number of trees infested and killed and a reduction of 90% in the amount of timber destroyed and the cash value of it. The years work paid for itself in the amount of timber saved. Data by J.D.Riggs. Report by J. J. Sullivan and H. E. Burke.

Very respectfully submitted,
(signed) H. E. Burke.

Dec 22/13.